
A Secular Indicator of the Degree of Economic Development and Synthetic Evaluation of Population Well-Being Trends

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ABSTRACT

The specifically multidisciplinary approach employed in the present paper is motivated by the validity of Engel's sociological laws, the usefulness of the elasticity of the population's food products demand according to income, the statistical association between the contraction of the share of expenditures for these goods and the expansion of economy development, and the consistent assessment of the trends in population well-being, in keeping with the research of family budgets, focusing on the case of Romania in the last century. The introduction is devoted to the statistical, economic and sociological tools for assessing economic development and the trends in well-being. The first section describes the weighting coefficients in the universe of interpret indexes, and the second presents the methodology relating to a secular instrument of assessing the degree of economic development and the synthetic evaluation of the trends of well-being in Romania, in parallel to a number of maximum and minimum (European and international) trends. The results presented, and the discussion caused by the statistical confrontation of that statistical, economic and sociological information, embrace, with the conclusions, the attempt made by the whole of the paper, to round up, by means of this tool, a necessary set of secular or Schumpeterian indicators, harmonized and comparable, of the GDP/capita type, or such as cost of life index, consumer price index, public and external debt, etc.; such already constructed indicators contribute to delineating the historical and macro-behavioural specificity of such an economy in Eastern Europe as that of Romania.

Keywords: *weighting coefficient; interpreter index; elasticity of demand; the share of food expenditure.*

INTRODUCTION

The most often cited classical statistical tools for assessing economic and social development remain gross domestic product (GDP) per capita, economic growth and life expectancy. The first is an absolute indicator placed under the specific cyclical influences of inflation and demography (with external

influences of capital and individual movements that induce subjective hints in all valuations), the second is a relative indicator resulted from the simple reduction of GDP index with real stationary state (or 100% level) and shows an increase only for positive values (adding the subjectivity of economic cyclicity as an additional shade to those existing before), and the third, life expectancy in years, denotes the highest degree of complexity possible (bringing together economic and demographic factorial influences and those related to environmental protection, the educational and cultural ones and those concerning health, enhancing the importance of the infrastructure of all of them, and thereby increasing instrumental subjectivity).

This paper proposes turning to account an instrument which the authors consider to be less exposed to subjective nuances, and especially necessary in view of the crises expected after the energy crisis that humanity is already deep into, that is the more delicate crises of food and water, in parallel to the aging of population at rather high rates over the coming decades (issues that will distort the tools presented above as classic, or that the latter will not be able to feel and measure objectively).

This instrument, defined as the percentage weighting coefficient (often expressed as a percentage or per thousand) of the consumption of food items in the average expenditure of a household, or simply the share of food in household expenditure enjoys a tradition of over a century and a half, has both instrumental limits specific to relative values (in between 0% and 100% in theory, and between 10% and 90% pragmatically, after a century of assessment), as well as a historical trend of homogenization, which the present article considers as the most important attribute of any coherent instrument of statistical quantification of such complex phenomena as development or welfare.

Another valuable use of the instrument proposed is that of an indicator of real convergence of the nations of the world, or of well-defined communities, such as the European Union, which pursue, by their own currency zones, to restrict the subjective influences of many phenomena difficult to measure with the accuracy needed by global and regional forecasts and partial regional estimates.

THE IMPORTANCE OF WEIGHTING COEFFICIENTS IN THE CONSTRUCTION OF INTERPRETER INDICES AND THE WEIGHT OF FOOD SUPPLIES IN HOUSEHOLD EXPENDITURE

The major concepts and issues that are to be dealt with at the outset are price indices, also renamed interpreter indices, as early as 2001, by the main author of the paper, as well as the weight of food supplies in household expenditure,

and also Engel's laws with Giffen's paradox, correlated with the expected food and water crises. Conceptually, the statistical index as an indicial sign, whose existence is relatively recent, although it exceeds more than three centuries of exploitation in the scientific universe, was built in the world full of diversity of prices, the first index having from the outset the *interpreter* nature, signified in this context with the original value of the Latin terms that compose it, namely *inter* "between" (middle, implicit mediation), and *pretium* "price" (the first index, created in 1707, which was fathered by the Anglican bishop William Fleetwood, author of "Chronicon Preciosum", was designed to *translate* the evolution of prices in England between 1440 and 1707).

The index (interpreter) was used, and is still used, to measure the quantitative change that cannot be directly observed in the heterogeneous world of prices, as it was defined by Bowley in his 1920 *Elements of Statistics*. The temporal evolution of indices required solving many theoretical and methodological issues regarding the method of calculation, including the formula, the practical way of construction, choosing the basis, and especially the weighting system and its specific coefficients. A weighting index appears in the construction of indexes as a coherent and complex aggregation solution, being obtained from the expenditures of an average household, either in the basic or the previous period (0) or in the current period (1), according to the following relation of calculation:

$$Cp_0 = \frac{(P_0Q_0)}{\sum_{i=1}^n (P_0Q_0)} \text{ sau } Cp_1 = \frac{(P_1Q_1)}{\sum_{i=1}^n (P_1Q_1)} \quad (1)$$

Weighting food goods / supplies (or food) in household expenditure is a specific structuring process, resulting from the simple comparing of food expenditure (spending on food supplies) to the total expenditure in that household (which also includes non-food goods and services), using the same calculation relationship (1), and the result is expressed as a percentage, or per thousand, per ten thousands, or even per hundred thousand, relative to the purchasing power of the national currency. In constructing the harmonized index of consumer prices (Harmonised Index of Consumer Prices, HIPC), the weight coefficients of food products (including soft drinks) represent both the relative expenditure of the average household with a specific group of products in the Eurostat classification, and especially the ratio to which the products included in that group are bought over the period analysed (the investigation is conducted on a monthly basis, and the aggregative evaluation is annual). The information is provided yearly by the common Household Budget Survey (HBS).

As early as 1853, Ernst Engel showed there are certain relations between the expenses for food, clothing, housing and rent, fuel and other goods and services. Based on the analysis of the income and expenditure budgets of a number of Belgian families, and influenced by Adolphe Quételet's method that identified statistical laws by quantifying a set of repeatabilities, E. Engel found the variability in the ratios of certain types of expenses compared to the incomes, which is nowadays called the correlation between the weighting coefficients of specific expenditure and the income level of the average household. In a concise presentation, Engel divided the households / families into three classes: a) *very poor* (having incomes of about 648 francs); b) *poor* (having incomes of approx. 845 francs); c) *well-to-do* (having incomes of circa 1,214 francs), attaching to them structures identical to the contemporary weighting coefficients resulting from the calculation of the proportion of expenditures in the budget of an average household.

The structural distribution of the expenses in a household of people employed in Belgium in 1853

Table 1

	Class of <i>very poor families</i> * (\bar{V} = 648 francs)	Class of <i>poor families</i> * (\bar{V} = 845 francs)	Class of <i>well-to-do families</i> * (\bar{V} = 1214 francs)	All classes (Belgian families surveyed)
Total, of which:	1,0000	1,0000	1,0000	1,0000
Food	0,7000	0,6700	0,6200	0,6500
Clothing	0,1200	0,1305	0,1400	0,1300
Housing	0,0870	0,0830	0,0900	0,0870
Fuel	0,0560	0,0550	0,0540	0,0550
Furniture	0,0060	0,0110	0,0230	0,0160
Education	0,0030	0,0106	0,0120	0,0100
Public services	0,0015	0,0050	0,0088	0,0060
Health	0,0170	0,0280	0,0430	0,0325
Personal services	0,0020	0,0019	0,0040	0,0028

Source: Engel, E., 1895. *Die Lebenskosten belgischer Arbeiterfamilien frueher und jetzt. Ermittelt aus Familienhaushaltsrechnungen und vergleichend zusammengestellt.* Editor Heinrich, C., Dresden.

*Note: \bar{V} = income of an average family

The homogeneity of the analyzed population was high, the families were drawn representatively and the information processed enjoyed a high degree of integrity, reliability and validity, increasing the credibility of the conclusions, later known as *the law or the laws of Engel*, which can be enunciated succinctly, as close as possible to the original wording, detailed for the three major categories of expenses:

I. The poorer a family, the larger the proportion of their income necessarily spent on simple food (as real incomes fall, the increase in the weighting coefficients of food expenses is more rapid).

II. In similar conditions, the proportion of income spent on food is an infallible index of the high or low level of living of the society (food weighting coefficients decrease rapidly when real incomes rise).

III. The higher the income of a family, the greater is the proportion of expenditures for clothing, education, public services, health, cultural services, leisure and other personal service, and the lower the proportions of heating and lighting costs (weighting coefficients grow at different rates, or are even lower for heating and lighting).

Engel intuitively guessed the downward trend of weighting coefficients of food prices, and also the existence of lower limits, below which the proportion of spending for food becomes stable, generating a threshold that defines a rich developed country (the weighting coefficients of food prices virtually fall overall, from 90% in certain very poor regions of India, to only 10% in the USA). In the international statistical practice it was found that Engel's law promptly stratifies economies as developed, or specific to rich countries (where the weight coefficients of food expenditure are 20%), of average development, characteristic of the emerging countries (where the same coefficients are between 20% and 50%), and underdeveloped or poor countries (where the coefficients are above 50%), but what he could not anticipate was just global homogenization and the dynamics of weights in relation to thresholds. In relation to the local tradition and the specific practice of food, correlation coefficients are practically identified that have different intensities in foods of vegetable origin, whose weights fall at a higher rate and to a higher proportion (potatoes, bread, vegetables, etc.) as compared to foodstuffs of animal origin (meat, butter, eggs, etc.).

Engel's laws represented the empirical foundation of modern elasticity laws and classical economics. Nearly one century later, Henrik Houthakker noted their accuracy and simplicity, stating that out of "all the empirical regularities observed in the data of economics, Engel's laws are probably the best formulated." Modern statistical research of demand reactivity, materialized in the evolution of consumer expenses in accordance with the evolution of incomes and prices is also done via the elasticity coefficients, which measure the influence that the factors income or price exercise on demand of goods and services, and the resulting values translate the intensity with which demand responds.

Income-elasticity and price-elasticity of demand is determined by reference to the rates expressed as a percentage ($R\% = I\% - 100\%$), and the classical relationship:

$$\lambda_{(y/x)} = \frac{\Delta y}{y} : \frac{\Delta x}{x} \quad (2)$$

is turned into

$$\lambda_{(y/x)} = R_{(\%)}^y / R_{(\%)}^x \quad (3)$$

and is expressed axiomatically as Engel's law:

Axiom I. The income-elasticity of demand for food products is direct and lower than the threshold 1 of proportionality ($\lambda_{c/v} < 1$), as foods are considered to be inelastic, and price-elasticity of food demand is *indirect*, but above the threshold (-1) and ($\lambda_{c/p} > -1$).

Axiom II. The income-elasticity of demand for non-food goods is variable, and also equal to threshold 1 ($\lambda_{c/v} = 1$), as expenditure on housing, clothing and shoes are appreciated as unitary elastic, while price-elasticity of demand for non-food goods is *indirect*, but equal to the threshold ($\lambda_{c/p} = -1$).

Axiom III. Income-elasticity of demand for services is variable, but above threshold 1 of proportionality ($\lambda_{c/v} > 1$), services are considered elastic, while price-elasticity of service demand is *indirect*, yet with values above the threshold ($\lambda_{c/p} > -1$). In all previous relationships, the *income-elasticity* coefficients and *price-elasticity* can be most simply determined by reference to the simple rhythms from the indexes:

$$\lambda_{(c/v)} = R_{(\%)}^c / R_{(\%)}^v \text{ and } \lambda_{(c/p)} = R_{(\%)}^c / R_{(\%)}^p \quad (4)$$

The demand-income or demand-price elasticity coefficients rank demand, and their analysis is performed by four methods of comparison: a) the same actor in demand during several periods (panel method, repetitive or rotational samples); b) multiple demand actors, who, during a reference period, pay nearly the same prices (method of family budgets); c) the total demand made solvable in an area that is relatively homogenous in point of prices over several periods of time (chronological method); d) the total demand made solvable in several areas at the same time (method of international comparisons). Elasticity coefficients are both tools intended to quantify the absorption capacity of the markets, and to know the directions that the savings of the consumers will take, but one must also consider the exceptions to Engel's axioms. The general law of demand coexisted with Giffen's paradox throughout the twentieth century, and is likely to be subject to it in a potential crisis centred on basic

foodstuffs, renamed inferior goods. Sir Robert Giffen's study, devoted to this phenomenon as manifest on the potato market in nineteenth century Ireland, generated *Giffen's paradox*, considered as a possible trend when the price of an inferior commodity increases, and the income effect being greater than the substitution effect, results in increasing the quantity requested. Significant inferior goods, which were also traditional in the consumption of the various national economies, accompanied their price increase by a demand expansion, just as the price reduction was accompanied by a contraction of their demand. For all those inferior goods, the *Giffen paradox* was the exception to the law of demand. The synthetic statement of that exception is as follows: the evolution of real income and prices in indirectly linked, in terms of statistics, to the modification of the quantity of goods required, from the class of the goods considered economically inferior. As an immediate consequence, the category of inferior goods represents those goods whose demand is reduced by increasing income, or whose amount increases with price (food, energy, according to Engel's law).

Many contemporary tendencies coexist, which provide multiple explanations to it, and emphasize the importance of weighting foodstuffs / food supply in the average or standardized household expenditure, focusing on patterns formed by the type of food in the early years, and centred on assumptions of energy and environmental developments, with calories and obesity trends, associated with the dynamics of other complex aspects complex, from the aspiration to decent consumption, to delimiting local, rural, regional, etc. consumer profile, but the present paper proposes the original exploitation of this statistical indicator based on some realities of the inadequacy of other indicators of development, prosperity, sustainability of economic growth.

METHOD AND METHODOLOGY

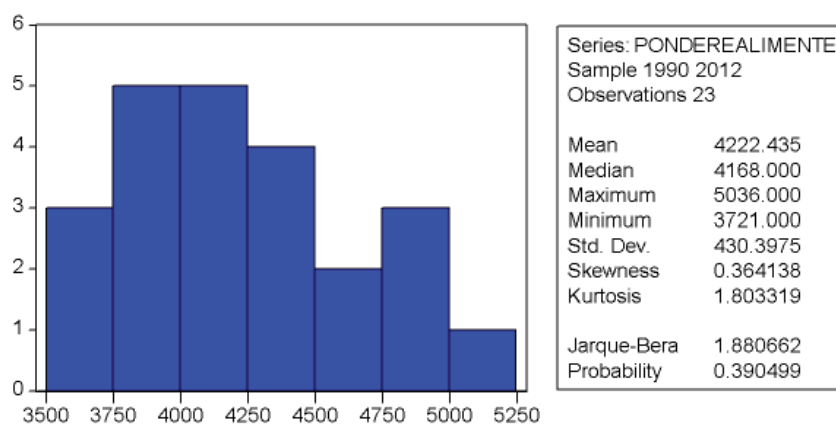
The method and methodology applied to practically achieve a secular instrument of the degree of economic development and synthetic evaluation of welfare trends, clearly emphasizing the actual transfer of economic growth or GDP per capita into individual welfare in Romania, do not allow to ensure statistical comparability of the indicator in the fullness of the standardized requirements. There are many reasons for that, and they are visible from the data presented in the table in Annex 1 of this article. However, a nearly secular type of construct can be achieved, with a level of error prevalently lying between 3% and 5%, and permanently below 10%, for the period 1933 to 2014, i.e. for almost eight decades, with some inherent gaps caused by the lack of data for critical historical periods.

On the other hand, the expected food and water crises require the construction of such an indicator based on the statistical finding about the qualities of the percentage weighting coefficient (frequently expressed as a percentage or per thousand) of consumption of foodstuffs in the average expenditure of a household, or, to put in more simply, the share or weight of foodstuffs in an average household's expenditure, regionally or nation-wide.

The logic of the method used in the construction and validation of this indicator is based on the theory of elasticity in keeping with the income of foodstuff demand and enables an objective analysis of the synthetic assessment of welfare trends. The major feature of that indicator is its homogenization with respect to time, and corresponds to the convergence process at the level of national economies within the global economy. If the initial postwar studies identified an 80% amplitude, or a scattering wave ranging from a peak of 90% in very poor regions of India, and a minimum of 10% in the USA, currently the amplitude has decreased to 52%, i.e. from a maximum value of 59% in rural areas in India to 7% in the USA. The main methodological problem to provide a set of statistical tools for the secular or historical evaluation still remains the diversity of researches on household consumption and even some difficulty in connecting them in time, which was overcome by accepting a statistical tool with a higher error of 5%, or the error limit that does not influence a decision based on a competitive indicator. A positive case concerns the family budget survey, a research underpinning the determination of the harmonized index of consumer prices, which, over the past 23 years, has offered, through the weights of the foodstuffs or food supply, provides a tool of assured historical comparability.

Histogram and the descriptive statistics of the variable weight of foodstuffs in the expenditure of an average household nation-wide

Figure 1



Software used: Eviews

As shown in Table 1, according to the histogram and descriptive statistics of the variable weight of food in average household expenditure in Romania, the data distribution over the 23 years is consistent and normal. This highlights that the instrument is fully comparable in the future, and the only thing that needs to be harmonized is the past, in order to ensure reliable and meaningful comparability.

RESULTS AND DISCUSSION

As with other statistical tools of a historic character built previously in other articles by the authors (a secular index of the CPI type, an index for a period of eight decades of the ICV type, etc.), for specific time periods data or information of ensured comparability could not be identified. Another feature is the variety of the measuring tools, from percentage to per thousand, per ten thousand or per hundred thousand, nearly all present in the national instrument according to the variation of the purchasing power of the national currency. Tables 2 and 3 also show that there are significant differences between the data sources, based on the national researches and those of a harmonized type, which intend to ensure instrument comparability as for example of the harmonized index of consumer prices, caused by regrouping and classifications that homogeneously mix the statistical tools for calculating price increases.

Weighting coefficients of foodstuffs expressed in per thousand (‰)

Table 2

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
UK	152	144	141	121	114	115	108	106	106	102	103	109	118	108	118	112	106	112
Austria	132	132	132	136	136	136	136	136	122	122	122	122	122	122	120	117	118	118
Belgium	174	192	192	192	192	192	192	192	174	174	174	174	174	174	174	174	174	167
Canada	125	125	125	125	114	114	114	114	114	115	115	115	115	115	111	111	111	111
Czech R.	261	261	261	261	198	198	198	198	198	198	163	163	163	170	170	150	150	171
Denmark	150	156	156	156	146	139	139	132	132	132	125	125	125	115	115	111	120	117
Switzerland	143	143	143	115	115	117	118	120	114	110	110	111	109	111	106	103	107	105
Estonia	-	-	-	338	338	270	262	251	240	239	228	217	217	229	236	242	237	238
Finland	161	158	158	158	158	138	138	138	138	133	133	133	133	133	134	134	139	142
France	178	178	163	163	156	156	159	155	154	155	151	150	149	150	147	145	149	149
Germany	131	131	131	131	103	103	103	103	103	104	104	104	104	104	104	103	103	103
Greece	221	221	185	185	185	185	185	185	178	178	178	178	178	178	171	171	171	209
Hungary	243	233	230	207	205	204	202	196	193	188	184	187	191	194	196	197	202	206
Iceland	171	169	165	170	169	164	155	152	146	135	127	121	137	149	171	146	142	146
Ireland	-	-	-	-	-	141	141	141	141	141	117	117	117	117	117	114	115	114
Italy	186	186	169	166	163	163	159	161	158	154	164	169	168	165	162	160	159	164
Japan	203	203	203	203	195	195	195	195	195	190	190	190	190	190	190	186	186	186
Luxemburg	162	162	158	145	144	154	151	145	137	138	137	138	118	111	111	110	102	104
Mexico	271	271	271	271	271	191	191	191	191	191	191	191	191	191	189	189	187	187
Holland	134	134	134	134	111	111	111	111	111	111	108	108	111	110	113	113	113	115
New Zealand	-	-	-	148	148	148	139	139	139	139	136	136	144	144	144	152	152	152
Norway	149	144	139	122	119	119	118	117	116	117	116	114	112	114	133	131	132	132
Poland	-	-	-	316	304	301	297	282	270	269	272	262	257	246	241	240	242	243
Portugal	-	-	-	227	227	201	201	198	193	191	192	191	189	180	181	179	196	212
Romania	489	504	476	439	447	443	423	417	407	389	375	376	374	374	374	372	377	376
Slovakia	-	292	292	292	292	292	236	236	236	185	173	158	161	161	184	176	167	175
Slovenia	273	274	268	230	218	219	207	197	180	172	171	174	179	165	170	166	169	172
Spain	268	268	268	268	215	219	219	226	226	223	221	203	181	184	182	183	183	189
Sweden	138	139	140	130	134	139	133	131	134	133	131	131	132	136	139	136	134	133
USA	-	96	97	96	96	97	83	86	82	80	79	80	82	78	78	81	86	85
Turkey	-	-	-	-	-	-	-	-	294	277	285	286	280	276	268	262	241	265

Source: http://stats.oecd.org/Index.aspx?DataSetCode=MEI_CPI_WEIGHTS

However, the results presented in Tables 2 and 3 have a common aspect for Romanian economy, which basically has the last standing in Europe, regardless of its downward evolution and a number of natural tendencies of mitigation of the analyzed indicator, which coincides with an increase, be it very slow, of the real welfare of the average household, and statistically confronting this statistical, economic and sociological information shows that there is no another country in Eastern Europe having EU-28 membership at that level (v. Table 3) as Romania, while the Baltic countries, displayed additionally, show they have improved welfare in households almost twice over the same period.

Share of food and non-alcoholic beverages in the average household expenditure

Table 3

Year	EU*	EA	RO	PL	CZ	HU	SK	SI	BG	LT	LV	EE
1998	18	18.4	44.1	34.7	26.4	-	29.6	27.4	-	44.2	40.3	34.2
1999	17.5	18	43.6	34.7	24.3	-	29.3	26.7	-	38.9	36	32.1
2000	15.4	15.9	38.1	30.5	23.3	-	26.8	23	-	37.3	32.4	30.9
2001	14.9	15.7	42	30.6	20.7	-	23.3	20.6	-	36.6	31	24.6
2002	15.1	15.8	42.0	29.1	20.6	21.8	22.6	20.6	-	33.2	32.5	24.1
2003	14.6	15.4	41.1	27.7	19.0	21.5	21.9	19.5	38.9	31.1	30.9	22.2
2004	15.1	15.6	40.6	20.5	19.1	20.9	20.8	18.5	38.6	28.9	28.3	22.2
2005	15.1	15.4	39.3	20.8	19.1	20.6	19.1	18.2	22.8	27.3	27.6	21.2
2006	14.7	15.2	38.4	19.8	18.4	20.1	17.2	17.3	22.6	26.5	27	20.6
2007	15.2	15.5	36.4	19.8	17.7	19.5	16.8	16.9	23.2	25.5	25	19.8
2008	16	15.7	36.8	22.8	18.8	19.7	17.9	17.4	23.8	25.1	23.6	20.8
2009	15.9	15.6	37.2	22.3	16.5	20.2	18.0	17.2	23	25	23.2	21.3
2010	15.5	15.3	34.9	21.4	18.1	20.5	17.9	16.3	20.1	25	23.7	21.5
2011	15.6	15.3	35.4	21.4	17.3	20.7	18.5	16.9	20.4	25.9	24.5	23.2
2012	15.3	15.2	31	20.9	16.0	19.7	18.2	17	22.5	25.8	23.9	20.8
2013	15.4	15.3	32	20	17.7	20	18.2	17.4	22.2	25.2	23.5	21.3
2014	15.8	15.7	31	19.8	18.0	20.5	19.0	17.5	23.0	23.6	23.3	21.0

Source: http://epp.eurostat.ec.europa.eu/inflation_dashboard/

*Note: The standard abbreviations used in the table: EU – European Union, EA- Euro Area, RO – Romania, PL – Poland, CZ - Czech Republic, HU – Hungary, SK – Slovakia, SI – Slovenia, BG – Bulgaria, LT – Lithuania, LV – Latvia, EE - Estonia

The tool that this article proposes, which was built using multiple sources, also listed at the bottom of Table 4, is useful and relevant to the real level of welfare of the average household in Romania

Share of foodstuffs in the average Romanian household in the last eight decades

Table 4

Year	Share of foodstuffs	Year	Share of foodstuffs	Year	Share of foodstuffs
1933	3894	1967*	4851	1990	4046
1934	3301	1968*	5045	1991	4254
1935	-	1969*	5026	1992	4692
1936	-	1970*	5003	1993	4705
1937	3560	1971*	4964	1994	4793
1938	3580	1972*	5473	1995	4888
1950*	3884	1973*	5112	1996	5036
1951*	4794	1974*	5011	1997	4761
1952*	4796	1975*	4940	1998	4388
1953*	4705	1976*	-	1999	4470
1954*	4774	1977*	4886	2000	4434
1955*	4650	1978*	4912	2001	4226
1956*	4457	1979*	-	2002	4168
1957*	4448	1980*	-	2003	4071
1958*	4521	1981*	-	2004	3892
1959*	4689	1982*	5440	2005	3750
1960*	4844	1983*	-	2006	3758
1961*	4448	1984*	5393	2007	3739
1962*	4732	1985**	5010	2008	3740
1963*	4648	1986	-	2009	3739
1964*	4774	1987	-	2010	3745
1965*	4840	1988	-	2011	3771
1966*	4851	1989**	5110	2012	3764

For the period 1939-1949 no data were available. Note : - = no data. *Note : The data were determined from the sales of food products and public catering out of the total sales. **Note: The data taken over are for an average household of a working couple having two children.

Some negative aspects could be identified, concerning the pre-1989 period: a) there was no sufficient variety of non-food consumer goods and services available to average Romanian households; b) self-consumption dominates the Romanian economy at the level of average households. On the other hand, there is a noticeable similarity between the trend of real GDP (GDP in 1990 was only equaled in 2004) and the trend of the share of food products, which has reached the same level over the same period of time.

A matrix of correlation between Romania's economic growth, life expectancy and the share of foodstuff expenditure in the average household over the last ten years shows a greater sensitivity of the indicator proposed to cyclical evolutions, which is virtually missing in life expectancy and is shown in a weaker manner in the growth indicator, which indicates that the instrument proposed is reliable and sensitive:

Matrix of correlation between the share of food products in the average Romanian household, life expectancy and economic growth in the last decade

Table 5

	Economic growth	Life expectancy	Share of food expenses
Economic growth	1.000000	-0.506871	0.270387
Life expectancy	-0.506871	1.000000	-0.624802
Share of food expenses	0.270387	-0.624802	1.000000

Software used: EViews

The correlations of the indicator proposed with economic growth and life expectancy emphasize an increased reactivity of the weight / share of food expenditures in the average Romanian household in comparison to any other indicator that economics created in order to assess economic phenomena.

Conclusions

The paper has been an attempt to complete, using the proposed instrument – even if it could not cover the entire period of analysis, an appropriate, much needed set of secular or Schumpeterian, harmonized and comparable indicators of the GDP/capita type, cost of living index, price index, public and external debt, etc., indicators already achieved, which contribute to delineate the historical and macro-behavioural specificity in an Eastern European economy like that of Romania.

A final detailed presentation of the main reasons for the share of foodstuffs in average Romanian households' expenditure being one of

the indicators needed to assess sustainable growth and real welfare of the population include:

a) its ability to be a more reactive and prompt indicator than other similar indicators already used, as it is constructed based on the theory of elasticity;

b) tendency to accurately reflect the majority of households, as opposed to GDP per capita, which is an arbitrary construction, exposed to great fluctuations, according to data from population censuses;

c) the effect of relativistic assessment, excluding the volatility of value indicators such as net earnings or net average income;

d) the ability to predict the effects of food crisis and taking over its impact in the future with much greater clarity than any of the indicators that are constructed to quantify welfare;

e) it is a more sensitive indicator than life expectancy.

The author's future research aims to clarify the values of the indicator proposed for as many of the periods lacking information, drawing on correlations with other indicators such as overall sales of foodstuffs, which are actually nothing more than household spending.

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